COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE
4949-A Cox Road, Glen Allen, Virginia 23060
(804) 527-5020 Fax (804) 527-5106
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

Gerard Seeley, Jr.
Regional Director

February 12, 2008

King William County
Central Crossing 1
Pump Station
Certificate to Operate
23501

Jim Duke
Rodgers – Chenault, Inc.
7240 Lee Davis Road
Mechanicsville, Virginia 23111

Dear Mr. Duke:

Your Certificate to Operate the referenced facility is enclosed.

Sincerely,

Raymond R. Barrows, Jr., P.E.
Area Engineer
Office of Wastewater Engineering

J. R. Bell Jr., DEQ-PRO
Thomas Irungu, M.D., M.P.H., Director, Three Rivers Health District
James C Pyne, Ph.D., P.E., HRSD
Frank A. Pleva, Administrator, King William County
Ignatius Mutoti, P.E., Timmons Group

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

CERTIFICATE TO OPERATE

EFFECTIVE DATE:	February 12, 2008
FACILITY NAME:	Central Crossing Pump Station 1
OWNER:	Hampton Roads Sanitary District
DESCRIPTION OF FACILITY SYSTEM:	The project consists of construction of a duplex, submersible pump station to serve a residential subdivision. Each pump is rated at 100 gallons per minute at 65 feet TDH.
CERTIFICATE OF COMPLETION:	By letter of February 8, 2008, the design engineer, Timmons Group, certified the facility has been completed, substantially in accordance with the approved plans
AUTHORIZATION TO OPERATE:	The owner is authorized to operate these facilities in accordance with the Sewage Collection and Treatment Regulations with the condition that an Operation and Maintenance Manual is submitted to the Department of Environmental Quality within 90 days for review and approval.
LOG NUMBER:	23501

ISSUED BY:

Raymond R. Barrows, Jr.

Raymond R. Barrows, Jr., P.E.
Area Engineer
Office of Wastewater Engineering

February 12, 2008

Date

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

February 08, 2008

Mr. Raymond "Reed" Barrows, PE, DEQ Engineer
4949 A Cox Rd
Glen Allen, VA 23060

RE: Statement Required Upon Completion of Construction
Central Crossing I Sewage Pumping Station

Dear "Reed"

In compliance with the requirements of 9 VAC 25-790-180 of the Virginia Sewerage Collection and Treatment Regulations, I submit the following statement:

The Central Crossing 1 Sewage Pumping Station and Forcemain described as:

Central Crossing Section 1

was completed substantially in accordance with approved documents. I certify that inspections were made at my direction to ensure that my statement above is correct.

Ignatius Mutoti, PhD, P.E.

Timmons Group, Senior Engineer

02/08/2008

cc: Terry Cave, Project Coordinator, Roger-Chenault, Inc.

Frank Pleva, Brian Purvis, King William County
Charles Reidlinger, Resource International
James C. Pyne, Ph.D., P.E., BCEE, Chief of Small Communities Division, HRSD

1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016
www.timmons.com

Central Gassemp

PREPARATION

1. Gather plans.
2. Alert remote station to testing.
3. Get a 25' tape or measuring rod.
4. Get s stop watch.
5. Fill wet well to nearly alarm level.
6. Have enough standby water to completely fill wet well.

TEST ALARM

1. Add enough water to cause alarms to sound and verify remote.

TEST PUMPING RATES

1. Pump down the well enough to clear alarm
2. Measure from lip of well to water.
3. Pump with one pump for one minute.
4. Calculate pumped volume from chart.

	3'	4'	5'	6'	8'
• **Wet well diameter**					
• **Gal/in drawdown**	4.4	7.8	12	18	31

5. Repeat with second. pump.
   If there are three pumps, do procedure with each pair of pumps.

TEST "OFF"

1. With both pumps running, pump down to cutoff.

TEST "ON"

1. Fill until lead pump starts.
2. Turn off lead pump.
3. Continue to fill until lag pump starts.

TEST ALTERNATE

1. Pump down to cutoff.
2. Fill a second time until pumps alternate.

SERVICE REPORT

S-L CONTROLS
2140 RENARD COURT ■ ANNAPOLIS, MARYLAND 21401 ■ (410) 841-5186 ■ FAX (410) 841-6330

LABOR HOURS	PURCHASE ORDER NO.	JOB NAME & NO.
TRAVEL HOURS	06-227	CENTRAL CROSSING P.S.
MILES	REQUESTED BY	KING WILLIAM CO VA
EXPENSES		

CHECK OUT PUMP RATE
WET WELL 6 FT ± ID
STATIC PRESSURE 13 PSI
DISCH PRESSURE 16 PSI
PRESS GAUGE LOCATED 27'6" ABOVE PUMP VOLUTE
WET WELL TOP TO PUMP VOLUTE 24'4"
PERFORM DRAW DOWN TEST ON EACH PUMP
PUMP No 1 STOP 233.25" 1 MIN TIME
START 227.5" 5.75" = .479 FT
$\pi 3^2 = 28.274 \times .479 = 13.543 FT^3 \times 7.4805 = 101.3 GAL$

PUMP NO 2 STOP 215.75" 2 MIN TIME
START 204.0" 11.75" = .979 F
$28.274 \times .979 = 27.680 FT^3 \times 7.4805 = 207.06 \times .5 = 103.5 GAL$

$16 PSI \times 2.307 = 36.912 FT + 27.5 FT = 64.412 TDH$

FLIGT 3127.170-0559
S/N 0680044 & 0680043

SEE ATTACHED PUMP START UP FORM

CUSTOMER SIGNATURE	DATE	SERVICE SIGNATURE
	13 FEB 2008	

NO 1

PUMP STARTUP REPORT

Model 3127.170-0559 Serial No. 0680043 / 0680044

Job Name CENTRAL CROSSING P.S City CENTRAL GARAGE State VA

Contractor Rep. CHIP - POWER & FLOW

Owner Rep. N/A

Cable:
Jacket Condition? YES Strain Reliefs Installed? YES

Cable Jacket sealed from moisture in wet well? YES

Conduit sealed from wet well to controls? YES

Ohms from panel ground to pump ground? .3 (<1 ohm max)

Resistance of cable and motor (measured at control)
T1-T2_____ T2-T3_____ T3-T1_____

Leak Sensor: Type FLS Ohms 1525 mA_____

Control:
Manufacturer FLYGT Job Number_____

Overload:
Manufacturer_____ Type_____ No._____ Rating_____

Name Plate Info: HP 11 8.2KW Volts 208 Amps 29

Voltage Supply: Pump Off T1-T2= 215 T2-T3= 214 T3-T1= 218

Pump On T1-T2= 214 T2-T3= 215 T3-T1= 217

Amperage: Pump On T1 27.4 T2 27.9 T3 29.5

Operational Checks:
Pumping Flow Rate 101 GPM Method Used DRAW DOWN Design Rate_____

Discharge Pressure 16 PSI Gauge at what elevation 27'6" ABOVE VOLUTE

Pump seated properly? YES Vibration? LO

At low level shutoff, how much of pump exposed? NONE

Comments: LIFTING SYSTEM NOT INSTALLED (GRIP EYE)

Witnessed:_____ Representing_____

Service Person: [signature] Date: 13 FEB 2008

rev3

NO. 2

PUMP STARTUP REPORT

Model 3127.170-0559 Serial No. 0680043/0680044

Job Name CENTRAL CROSSING P.S. City CENTRAL GARAGE State VA

Contractor Rep. CHIP - POWER & FLOW

Owner Rep. N/A

Cable:
Jacket Condition? YES Strain Reliefs Installed? YES

Cable Jacket sealed from moisture in wet well? YES

Conduit sealed from wet well to controls? YES

Ohms from panel ground to pump ground? .3 (<1 ohm max)

Resistance of cable and motor (measured at control)
T1-T2 T2-T3 T3-T1

Leak Sensor: Type FLS Ohms 1523 mA

Control:
Manufacturer FLYGT Job Number

Overload:
Manufacturer Type No. Rating

Name Plate Info: HP 11 8.2KW Volts 208 Amps 29

Voltage Supply: Pump Off T1-T2= 215 T2-T3= 214 T3-T1= 218

Pump On T1-T2= 214 T2-T3= 215 T3-T1= 217

Amperage: Pump On T1 27.0 T2 28.4 T3 30.5

Operational Checks:
Pumping Flow Rate 103 GPM Method Used DRAW DOWN Design Rate

Discharge Pressure 16 PSI Gauge at what elevation 27'6" ABOVE VOLUTE

Pump seated properly? YES Vibration? NO

At low level shutoff, how much of pump exposed? NONE

Comments: LIFTING SYSTEM NOT INSTALLED (GAI PIPE)

Witnessed: Representing

Service Person: [signature] Date: 13 FEB 2008

rev3

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

February 14, 2008

Mr. Raymond "Reed" Barrows, PE, DEQ Engineer
4949 A Cox Rd
Glen Allen, VA 23060

RE: Central Crossing I Sewage Pumping Station
Manufacturer's Performance Certification

Dear "Reed"

Below are results of field performance pumping tests report by the Flygt Technician. As reported, operating at the correct ampere draw, the pumps gave the following:

PUMP # 1: 101 gpm @ 64.5 ft TDH

PUMP # 2: 103 gpm @ 64.5 ft TDH

AVERAGE: 102 gpm@ 64.5 ft TDH

Please note the design point per my design is 94 gpm @ 62 ft TDH and 24 gpm @ 176 ft TDH (with all 4 pumping stations operating). The Central Crossing 1 pumping station is there expected to operated at 37.4 gpm @ 176 ft TDH, performing slightly better than anticipated when all 4 Pumping Stations are running and can therefore comfortably convey wastewater.

Sincerely,

Ignatius Mutoti, PhD, P.E.

Timmons Group, Senior Engineer

cc:

Terr Cave, Project Cordinator, Roger-Chenault, Inc
Charles Reidlinger, Resource International
James C. Pyne, Ph.D., P.E., BCEE, Chief of Small Communities Division, HRSD

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Site Development | Residential | Infrastructure | Technology
www.timmons.com

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

KW

January 08, 2008

Attn: Reed Barrows, P.E.
Virginia Department of Environmental Quality
4949-A Cox Road
Glen Allen, Virginia 23060

Subject: Central Crossing-I Pump Station O&M Manual

Dear Mr. Barrows,

Timmons Group is pleased to submit three (3) copies of the Central Crossing-I Pump Station Operation and Maintenance (O&M) Manual for your review and approval.

Should you have comments or questions regarding this O&M submittal, please do not hesitate to contact me at (804) 200-6393 or Mitul Patel at (804) 200-6470.

Sincerely,

Ignatius Mutoti, Ph.D, P.E.
Timmons Group

1001 Boulders Parkway, Suite 300 | Richmond, Virginia 23225
TEL 804.200.6500 FAX 804.560.1016
Site Development | Residential | Infrastructure | Technology
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